

REMARKS

In the Office Action, the Examiner rejected claims 10, 12-16, 18-22, and 24-32. By this paper, Applicants hereby amend independent claims 10, 20, and 27, and add new dependent claims 36-38 for clarification of certain features to expedite allowance of the present application. These amendments do not add any new matter. Upon entry of these amendments, claims 10, 12-16, 18-22, 24-32, and 36-38 will be pending in the present application. In view of the foregoing amendments and the following remarks, Applicants respectfully request reconsideration and allowance of all pending claims.

Claim Rejections under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 10, 12, 18, 20-22, 27, and 32 under 35 U.S.C. § 103(a) as being unpatentable over Johansen et al. (U.S. Patent No. 6,595,487) in view of Williams (U.S. Patent No. 4,802,502). In addition, the Examiner rejected claims 13 and 28 under 35 U.S.C. § 103(a) as being unpatentable over Johansen in view of Williams and further in view of Ursel et al. (WO 01/99259). The examiner also rejected claims 14, 16, 19, 24-26, 30, and 31 under 35 U.S.C. § 103(a) as being unpatentable over Johansen in view of Williams and further in view of Welz, Jr. et al. (U.S. Patent No. 6,279,870). In addition, the Examiner rejected claim 15 under 35 U.S.C. § 103(a) as being unpatentable over Johansen in view of Williams and further in view of Schoenberg (U.S. Patent No. 5,166,677) and Andre (U.S. Patent No. 4,902,030). The Examiner also rejected claim 29 under 35 U.S.C. § 103(a) as being unpatentable over Johansen in view of Williams and further in view of O'Connor et al. (U.S. Patent No. 3,699,989). Applicants respectfully traverse these rejections.

Legal Precedent and Guidelines

The pending claims must be given an interpretation that is reasonable and consistent with the *specification*. See *In re Prater*, 415 F.2d 1393, 1404-05, 162 U.S.P.Q. 541, 550-51 (C.C.P.A. 1969) (emphasis added); see also *In re Morris*, 127 F.3d 1048, 1054-55, 44 U.S.P.Q.2d 1023, 1027-28 (Fed. Cir. 1997); see also M.P.E.P. §§ 608.01(o) and 2111. Indeed, the specification is

“the primary basis for construing the claims.” *See Phillips v. AWH Corp.*, No. 03-1269, -1286, at 13-16 (Fed. Cir. July 12, 2005) (*en banc*). One should rely *heavily* on the written description for guidance as to the meaning of the claims. *See id.*

Interpretation of the claims must also be consistent with the interpretation that *one of ordinary skill in the art* would reach. *See In re Cortright*, 165 F.3d 1353, 1359, 49 U.S.P.Q.2d 1464, 1468 (Fed. Cir. 1999); M.P.E.P. § 2111. “The inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation.” *See Collegenet, Inc. v. ApplyYourself, Inc.*, 418 F.3d 1225, 75 U.S.P.Q.2d 1733, 1738 (Fed. Cir. 2005) (quoting *Phillips v. AWH Corp.*, 75 U.S.P.Q.2d 1321, 1326). The Federal Circuit has made clear that derivation of a claim term must be based on “usage in the ordinary and accustomed meaning of the words amongst artisans of ordinary skill in the relevant art.” *See id.*

The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979). In addressing obviousness determinations under 35 U.S.C. § 103, the Supreme Court in *KSR International Co. v. Teleflex Inc.*, No. 04-1350 (April 30, 2007), reaffirmed many of its precedents relating to obviousness including its holding in *Graham v. John Deere Co.*, 383 U.S. 1 (1966). In *Graham*, the Court set out an objective analysis for applying the statutory language of §103:

Under §103, the scope and content of the prior art are to be determined, differences between the prior art and the claims at issue are to be ascertained, and the level of ordinary skill in the pertinent art are to be resolved. Against this background the obviousness or non-obviousness of the subject matter is to be determined. Such secondary considerations as commercial success, long-felt but unresolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. *KSR, slip op.* at 2 (citing *Graham*, 383 U.S. at 17-18).

In *KSR*, the Court also reaffirmed that “a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in

the prior art.” *Id.* at 14. In this regard, the *KSR* court stated that “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does ... because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.” *Id.* at 14-15. Traditionally, to establish a *prima facie* case of obviousness, the CCPA and the Federal Circuit have required that the prior art not only include all of the claimed elements, but also some teaching, suggestion, or motivation to combine the known elements in the same manner set forth in the claim at issue. *See, e.g., ASC Hospital Systems Inc. v. Montifiore Hospital*, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984) (holding that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination.); *In re Mills*, 16 U.S.P.Q.2d 1430, 1433 (Fed. Cir. 1990) (holding that the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination). In *KSR*, the court noted that the demonstration of a teaching, suggestion, or motivation to combine provides a “helpful insight” in determining whether claimed subject matter is obvious. *KSR, slip op.* at 14. However, the court rejected a *rigid* application of the “TSM” test. *Id.* at 11. In this regard, the court stated:

The obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and explicit content of issued patents. The diversity of inventive pursuit and of modern technology counsels against limiting the analysis in this way. In many fields it may be that there is little discussion of obvious techniques or combinations, and it often may be the case that market demand, rather than scientific literature, will drive design trends. *Id.* at 15.

In other words, the *KSR* court rejected a rigid application of the TSM test which requires that a teaching, suggestion or motivation to combine elements in a particular manner must be explicitly found in the cited prior art. Instead, the *KSR* court favored a more expansive view of the sources of evidence that may be considered in determining an apparent reason to combine known elements by stating:

Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art all in order to determine whether there was an apparent reason to combine in the known elements in the fashion claimed in the patent at issue. *Id.* at 14.

The *KSR* court also noted that there is not necessarily an inconsistency between the idea underlying the TSM test and the *Graham* analysis, and it further stated that the broader application of the TSM test found in certain Federal Circuit decisions appears to be consistent with *Graham*. *Id.* at 17-18 (citing *DyStar Textilfarben GmbH and Co. v. C.H. Patrick Co.*, 464 F.3d 1356, 1367 (2006) (“Our suggestion test is in actuality quite flexible and not only permits but *requires* consideration of common knowledge and common sense”); *Alza Corp. v. Mylan Labs, Inc.*, 464 F.3d 1286, 1291 (2006) (“There is flexibility in our obviousness jurisprudence because a motivation may be found *implicitly* in the prior art. We do not have a rigid test that requires a teaching to combine ... “)).

Furthermore, the *KSR* court did not diminish the requirement for objective evidence of obviousness. *Id.* at 14 (“To facilitate review, this analysis should be made explicit. See *In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006) (“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”). As our precedents make clear, however, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.”); see also, *In re Lee*, 61 U.S.P.Q.2d 1430, 1436 (Fed. Cir. 2002) (holding that the factual inquiry whether to combine references must be thorough and searching, and that it must be based on *objective evidence of record*).

When prior art references require a selected combination to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gained from the invention itself, i.e., something in the prior art as a whole must suggest the desirability, and thus the obviousness, of making the combination. *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 U.S.P.Q.2d 1434 (Fed. Cir. 1988). One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). The Federal Circuit has warned that the Examiner must not, “fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.” *In re Dembiczak*, F.3d 994, 999, 50 U.S.P.Q.2d 52 (Fed. Cir. 1999) (quoting *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983)).

It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 U.S.P.Q. 769, 779 (Fed. Cir. 1983); M.P.E.P. § 2145. Moreover, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 U.S.P.Q. 349 (CCPA 1959); *see* M.P.E.P. § 2143.01(VI). If the proposed modification or combination would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984); *see* M.P.E.P. § 2143.01(V).

Deficiencies of the Rejections of Amended Independent Claims 10, 20, and 27

Amended independent claim 10 recites, *inter alia*, “a submersible actuator, comprising: ... a second housing having a control circuit disposed in a second pressurized fluid, wherein the second housing is hermetically sealed, wherein the second pressurized fluid is nitrogen.” (Emphasis added.) Similarly, amended independent claim 20 recites, *inter alia*, “pneumatically pressurizing a control circuit in a first enclosure portion of a submersible actuator, wherein the

first enclosure portion is hermetically sealed, and wherein pneumatically pressurizing comprises inertly pressurizing the control circuit in the first enclosure portion with pressurized nitrogen.” (Emphasis added.) In addition, independent claim 27 recites, *inter alia*, “a submersible actuator, comprising: ... a second container filled with nitrogen ... and a control circuit disposed in the second container, wherein the second container is hermetically sealed.” (Emphasis added.) As such, each of the amended independent claims generally recites a submersible actuator including a hermetically sealed housing (or “enclosure” or “container”) having a control circuit disposed in pressurized nitrogen.

Applicants contend that the cited references, taken alone or in hypothetical combination, fail to teach or suggest a submersible actuator including a hermetically sealed housing (or “enclosure” or “container”) having a control circuit disposed in pressurized nitrogen, as generally recited by amended independent claims 10, 20, and 27. Indeed, in the Office Action, the Examiner acknowledged that “Johansen et al. fail to disclose that the control circuit is disposed in a second pressurized fluid, wherein the second pressurized fluid is nitrogen.” *See* Office Action, page 3. Rather, the Examiner relied upon Williams as disclosing these features, and specifically stated that Williams discloses “an enclosure that is overpressurized with an inert gas (col. 4, lines 10-15) in an electronics chamber (10) (col. 6, lines 1-3 and lines 38-40). The use of inert gas in Williams would meet the more specific term of nitrogen, since inert gas would encompass all known and unknown inert gases.” *See id.*

However, Applicants contend that there is no suggestion in Williams that an electronics chamber is hermetically sealed, as recited by amended independent claims 10, 20, and 27. Indeed, Williams is primarily directed toward a purge air box 10 configured to supply a flow of non-hazardous inert gas (i.e., “purge air”) through an enclosure (not shown in Williams) that houses electronics, to maintain the enclosure at a pressure slightly above ambient pressure, thereby preventing hazardous external gases from entering the enclosure. *See, e.g.*, Williams, column 2, lines 9-13; column 4, lines 4-15. More specifically, the purge air flows into the

enclosure, circulates inside the enclosure, and is finally expelled from the enclosure through a relief valve. *See, e.g., id.*, column 2, lines 47-49. As such, the purge air of Williams is clearly not hermetically sealed within the enclosure. Indeed, Williams even discloses that there may be some leakage of the purge air to outside of the enclosure. *See, e.g., id.*, column 3, lines 18-20. As such, Applicants contend that Williams does not teach or suggest a hermetically sealed housing (or “enclosure” or “container”) having a control circuit disposed in pressurized nitrogen, as generally recited by amended independent claims 10, 20, and 27.

Furthermore, Applicants contend that it would not have been obvious to combine the purge air box 10 of Williams with the submersible actuator of the present claims, as suggested by the Examiner in the Office Action. For example, as discussed above, Williams clearly discloses that the purge air box 10 maintains the enclosure at a pressure slightly above ambient pressure. *See, e.g., id.*, column 2, lines 9-13; column 4, lines 4-15. As such, the generally atmospheric environment of the enclosure of Williams is drastically different than an underwater environment (e.g., submersible) as recited in the claims. An underwater environment, such as a subsea environment, may be particularly detrimental to sensitive electronics, and is also at a significant pressure (e.g., a pressure at up to 3,000 meters of sea depth). Thus, pressurized nitrogen in an underwater environment would provide the additional benefit of counterbalancing the pressure of the water. In addition, it is noted that Williams is primarily directed toward the purge air box 10, which includes mechanical and pneumatic components for maintaining the flow of purge air through the enclosure. *See, e.g., id.*, column 2, lines 26-35; FIGS. 1-4. Because of the remote nature of the submersible actuator, utilizing the purge air box 10 in conjunction with a subsea housing would not appear to be feasible.

For at least these reasons, among others, Applicants contend that the cited references, taken alone or in hypothetical combination, fail to teach or suggest a submersible actuator including a hermetically sealed housing (or “enclosure” or “container”) having a control circuit disposed in pressurized nitrogen, as generally recited by amended independent claims 10, 20,

and 27. As such, Applicants respectfully request withdrawal of the rejections of amended independent claims 10, 20, and 27 and the claims depending therefrom.

New Claims

As noted above, Applicants hereby add new dependent claims 36-38. Applicants submit that the new dependent claims are allowable at least for the reasons discussed in detail above. In addition, Applicants stress that the cited references, taken alone or in hypothetical combination, fail to teach or suggest the specific features recited by new dependent claims 36-38. More specifically, new dependent claims 36-38 recite that the first and second housings (or “enclosures” or “containers”) are capable of withstanding pressures at up to 3,000 meters of sea depth. As discussed above, Williams clearly discloses that the purge air box 10 maintains the enclosure at a pressure slightly above ambient pressure. *See, e.g., id.*, column 2, lines 9-13; column 4, lines 4-15. As such, Williams clearly does not teach or suggest that the enclosure is capable of withstanding pressures at up to 3,000 meters of sea depth, as recited by new dependent claims 36-38. Accordingly, Applicants respectfully request consideration and allowance of new dependent claims 36-38.

Conclusion

Applicants respectfully submit that all pending claims should be in condition for allowance. However, if the Examiner believes that certain amendments would expedite allowance of the present application or if the Examiner wishes to resolve any other issues by way of a telephone conference, the Examiner is kindly invited to contact the undersigned attorney at the telephone number indicated below.

Respectfully submitted,

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